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Low grain method for feeding racehorses

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ABSTRACT

A method of feeding and a product for feeding a racehorse to enhance that horse's performance. The method requires the substitution of a cereal grain composition for at least part of the grain component of a feedstuff. The cereal grain composition consists of cereal grain from which a substantial proportion of endosperm has been removed. The product is a feedstuff in which substitution of the cereal grain compositions for at least part of the grain component in a feedstuff, has occurred.

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COMPLETE SPECIFICATION
STANDARD PATENT

Invention Title: "LOW GRAIN METHOD FOR FEEDING RACEHORSES"

The following statement is a full description of this invention, including the best method of performing it known to me:

TITLE

LOW GRAIN METHOD FOR FEEDING RACEHORSES

FIELD OF THE INVENTION

This invention relates to the field of equine nutrition and in particular a method and product for feeding racehorses to enhance their race performance.

BACKGROUND

Racehorses are commonly fed diets containing significant amounts of cereal grains in the belief that such grains provide a readily assimilated carbohydrate energy source for racing performance.

A typical feedstuff for a racehorse consists of the following:-

1. Grain 4-8 kg. The grain is usually one or more of oats, barley and corn and makes up 50-80% of the diet.
2. Chaff 0.5 kg. This component is usually oaten, wheaten or lucerne chaff.
3. Hay 1-4 kg. The hay is usually lucerne hay.
4. Protein Concentrate 0.5-2 kg. This concentrate is usually derived from cottonseed, tick bean or soyabean.
5. Bran approximately 0.5 kg (in some, not all, diets).
6. Supplements containing vitamins, minerals and trace elements, electrolytes, vitamin E and iron. Supplements are often added in variable quantities as required.

The total dry matter intake of such a typical feedstuff is usually in the order of 8-12 kg per day per horse. The above components may be presented to a racehorse in separate portions or alternatively the grain component may be mixed as a compounded sweetfeed.

Racehorses fed with high grain containing feedstuffs are known to suffer from problems associated with lactic acid accumulation such as muscle cramps which may be manifested by a condition known as "tying up syndrome". Racehorses may also suffer from decreased exercise tolerance and suffer hoof problems such as heat and tenderness as a result of lactic acid accumulation.

Other observed problems associated with high grain containing feedstuffs include nervousness and intestinal problems. The latter manifest as difficulty in absorbing food from the intestinal tract.

Individual horses may suffer more severe clinical signs due to an additional sensitivity to particular components of the feedstuff. This is particularly the case with oat grain which appears to induce adverse intolerance effects in some race horses.

Various attempts have been made to reduce or prevent lactic acid accumulation so that its level is maintained low enough to avoid or minimise adverse consequences. For example, bicarbonate drenches can be administered to racehorses in an attempt to counteract the build up of lactic acid. These are often referred to colloquially as "milk shakes" and were popular for some time. They were subsequently made illegal in

Australia, presumably due to their ability to enhance performance in competing racehorses.

Virginiamycin is an antibiotic that was originally developed for use in feedlot cattle where heavy grain feeding produces high levels of lactic acid resulting in Laminitis and other problems. This product has been marketed to the horse industry and administered to young growing horses as well as racehorses.

There have been attempts to reduce lactic acid level in horses by alteration of the basic components of the diet. For example, attempts have been made to cook grains prior to feeding them to horses in the hope that accumulation of lactic acid will be reduced or minimised. To date, this has been unsuccessful.

The husbandry of racehorses would be advanced if a method of feeding could be developed which enhanced performance but did not rely on high levels of whole grain. It would also be of benefit if such a method reduced the production of excess lactic acid in racehorses.

OBJECTS OF THE INVENTION

It is an object of the present invention to provide a method of feeding and a product for feeding to enhance the performance of a race horse. It is a preferred object to provide a method of feeding and a product for feeding to reduce the production of excess lactic acid in the body of a racehorse.

DISCLOSURE OF THE INVENTION

According to one aspect, the invention resides in a method of improving the race performance of a racehorse of a type conventionally fed a feedstuff including a substantial portion of cereal grain wherein at least 36% of the cereal grain component of said feedstuff is replaced by a cereal grain composition comprising cereal grain from which a substantial proportion of endosperm has been removed.

Preferably the cereal grain composition is from one of wheat, rice, maize, barley, sorghum, oats, millet, triticale or rye or any combination thereof. It maybe preferred to exclude oats as a source of cereal grain composition.

The cereal grain composition may include bran or pollard or a combination thereof. The bran may be derived from wheat, rice, barley, sorghum, oats, millet, triticale or rye or any combination thereof.

Further, the cereal grain may also be replaced at least in part by copra meal or chaff or hay or any combination thereof.

In a further aspect, the invention resides in a feedstuff for horses comprising cereal grain in the range of 0-74% and a cereal grain composition comprising cereal grain from which a substantial proportion of endosperm has been removed, in the range of 36-100%.

The cereal grain composition is suitably derived from a cereal grain selected from wheat, rice, maize, barley, sorghum, oats, millet, triticale or rye or any combination thereof. In some horses it may be of further

benefit to select the cereal grain composition from ingredients excluding oats, due to intolerance of this grain and its derivatives in those horses.

The feedstuff may include bran or pollard as at least part of the cereal grain composition.

The feedstuff may include copra meal or lucerne or any combination thereof as a replacement for at least part of the cereal grain component.

Suitably, the feedstuff may further comprise additional components selected from chaff, bran, hay or protein concentrate or any combination thereof. Preferably all additional components are added so that the components of the feedstuff are present as follows:

Grain	0-50%
Cereal Grain Composition	18-80%
Chaff	4-6%
Hay	10-30%
Protein Concentrate	5-20%
Bran	0-5%.

Preferably the feedstuff includes minerals selected from calcium, magnesium or phosphorous or any combination thereof.

Suitably the feedstuff includes electrolytes selected from sodium, potassium, chloride, magnesium or any combination thereof.

The feedstuff may include trace elements selected from copper, zinc, manganese, selenium, cobalt, iodine or iron or any combination thereof.

Preferably the feedstuff includes vitamins selected from Vitamin E, Vitamin A, Vitamin B1, Vitamin B2, Vitamin B3, Vitamin B6, nicotinic acid, calcium pantothenate or folic acid or any combination thereof.

DETAILED DESCRIPTION OF THE INVENTION

The inventor has discovered that, contrary to widely held beliefs, the performance and well being of a racehorse can be improved by substituting a cereal grain composition comprising cereal grain from which a substantial proportion of endosperm has been removed ("cereal grain composition") for at least part of the grain component of a typical feedstuff for a racehorse.

An example of such a cereal grain composition is bran which is the firm outer coat of kernels of wheat, barley, rice and other cereal grains. It is usually separated from the kernel or endosperm during milling of the cereal grain. Pollard is a by-product of the process of the milling of wheat and is also such a cereal grain composition.

A feedstuff according to the invention may be obtained by substitution of the cereal grain composition for at least part of the grain in the typical prior art diet for racehorses. The inventor has discovered that substitution of cereal grain composition to a level of at least 36% of the total grain carbohydrate component of the diet results in predictable

benefit to a racehorse.

Such a diet could be mixed according to the following formulations:-

Grain	0 - 3 kg
Cereal Grain Composition	1 - 4 Kg
Chaff	0.5 kg
Hay	1 - 4 kg
Protein Concentrate	0.5 - 2 kg
Bran	0.5 kg

Supplement as required.

Alternatively a prior art diet containing higher grain levels could be altered as follows:-

Grain	0 - 6 kg
Cereal Grain Composition	2 - 8 kg
Chaff	0.5 kg
Hay	1 - 4 kg
Bran	0.5 kg

Supplement as required.

Supplements in the feedstuff according to the invention may be added to provide the following elemental levels of trace elements, minerals, electrolytes and vitamins.

Trace Elements

Copper	50-1000 ppm
Zinc	40-700 ppm
Manganese	30-200 ppm
Selenium	0.1-1 ppm
Cobalt	0.5-1 ppm
Iodine	0.5-1 ppm
Iron	20-450 mg/kg

Copper and zinc may be obtained from Copper Sulphate and Zinc Sulphate respectively.

Minerals

Calcium	3-30 g/kg
Phosphate	3-10 g/kg
Magnesium	2-15 g/kg

Electrolytes

Sodium	5-25 g/kg
Potassium	5-35 g/kg
Chloride	3-30 g/kg

Vitamins

Vitamin E	25-400 mg/kg
Vitamin A	7000-55000 IU/kg
Vitamin B1	2-100 mg/kg

Vitamin B2	2-100 mg/kg
Vitamin B6	2-16 mg/kg
Nicotinic Acid	3-30 mg/kg
Calcium Pantothenate	2-30 mg/kg
Folic Acid	2-25 mg/kg

The benefits of feeding racehorses according to the invention have been shown in the following ways. Racehorses that have suffered from muscle cramping or the tying up syndrome have improved or been cured as a result of feeding according to the method of the invention.

Racehorses that have experienced heat and tenderness in their feet when fed according to prior art diets have improved and become asymptomatic as a result of feeding according to the method of the invention.

There has been a marked improvement in racehorses that have demonstrated difficulties in absorbing feed from their intestinal tract. This was evidenced by improved body condition when fed on a feeding program according to the present invention. This has been particularly evident when fed with wheat bran or pollard which have been found by the inventor to be best tolerated by horses.

Moreover, the performance of racehorses fed with a feedstuff according to the invention has shown improvement. The inventor has also observed a decrease in the level of nervousness in some horses when fed by the method according to the invention.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A method of improving the race performance of a racehorse of the type conventionally fed a feedstuff including a substantial portion of cereal grain wherein at least 36% of the cereal grain component of said feedstuff is replaced by a cereal grain composition comprising cereal grain from which a substantial proportion of endosperm has been removed.

2. The method of claim 1 wherein the cereal grain composition is from one of wheat, rice, maize, barley, sorghum, oats, millet, triticale or rye or any combination thereof.

3. The method of either of claims 1 or 2 wherein the cereal grain composition includes bran or pollard or a combination thereof.

4. The method of claim 3 wherein the bran is derived from one of wheat, rice, barley, sorghum, oats, millet, triticale or rye or any combination thereof.

5. The method of any one of claims 1 to 4 wherein the cereal grain is replaced, at least in part, by copra meal or chaff or hay or any combination thereof.

6. A method as claimed in any preceding claim wherein the cereal grain composition is derived from cereal grain selected from one of wheat, rice, maize, barley, sorghum, oats, millet, triticale or rye or any combination thereof.

7. A method as claimed in claim 6 wherein the cereal composition further includes bran or pollard.

8. A method as claimed in claim 6 or claim 7 wherein the cereal composition further includes copra meal or lucerne or a combination thereof.

9. A method as claimed in any one of claims 6 to 8 wherein the cereal composition further includes components elected from chaff, bran, hay or protein concentrate or any combination thereof.

10. A feedstuff for improving the race performance of race horses according to the method of any one of claims 1 to 5, said feedstuff comprising:-

Grain	0-50%
Cereal Grain Composition	18-80%
Chaff	4-6%
Hay	10-30%
Protein Concentrate	5-20%
Bran	0-5%,

said feedstuff characterized in that said cereal grain composition comprises cereal grain from which a substantial portion of endosperm has been removed.

11. The feedstuff of claim 10 further including added minerals.

12. The feedstuff of claim 11 wherein the minerals are selected from calcium, magnesium or phosphorous or any combination thereof.

13. The feedstuff of any one of claims 10 to 12 further including added electrolytes.

14. The feedstuff of claim 13 wherein the electrolytes are selected from

sodium, potassium, chloride, magnesium or any combination thereof.

15. The feedstuff of any one of claims 10 to 14 further including added trace elements.

16. The feedstuff of claim 15 wherein the trace elements are selected from copper, zinc, manganese, selenium, cobalt, iodine or iron or any combination thereof.

17. The feedstuff of any one of claims 10 to 16 further including added vitamins.

18. The feedstuff of claim 17 wherein the vitamins are selected from Vitamin E, Vitamin A, Vitamin B1, Vitamin B2, Vitamin B3, Vitamin B6, nicotinic acid, calcium pantothenate or folic acid or any combination thereof.

DATED this Fifth day of August 2002.

MARCUS JAMES GREATHEAD

By his Patent Attorneys

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